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(54) Title: HIGHLY PERMISSIVE CELL LINES FOR HEPATITIS C VIRUS REPLICATION

(57) Abstract: This invention relates generally to cells and cell lines that are permissive for hepatitis C virus (HCV) replication, and methods and materials for making and using them.

## INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : C12N 5/00, 5/02, 5/10			
US CL : 435/ 455, 456, 325			
According to International Patent Classification (IPC) or to both national classification and IPC			
B. FIELDS SEARCHED			
Minimum documentation searched (classification system followed by classification symbols) U.S.: 435/455, 456, 325			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubMEd, WEST, Medline, CAPlus, BIOSIS, EMBASE			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where ap		Relevant to claim No.
X, P	BLIGHT et al., "Highly Permissive Cell Line for Su VIrus RNA Replication," Journal of Virology, Dece 13001-14		1-38
A,P	US 6,630,343 B1 (BARTENSCHLAGER) 07 October 2003 (07.10.2003)esp. Columns 4-11.		1-38
A,P	EP 1 267 167 A1 (PFIZER LIMITED) 18 December 2002 (18.12.02), esp. pages 5-6.		1-38
A	US 6,127,116 A (RICE et al.) 03 October 2000 (03.10.00), esp. Columns 11-15.		1-38
A	CHUNG et al., "Hepatitis C virus replication is directly inhibited by IFN-alpha in a full-length binary expression system," Proceedings of the National Academy of Sciences, USA, August 2001, Vol 98 No. 17, pages 9847-52.		1-38
A,P	BARTENSCHLAGER et al., "Replication of the hepatitis C virus in cell culture, Antiviral Research, October 2003, Vol 60 No. 2, pages 91-102.		1-38
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Further documents are listed in the continuation of Box C. See patent family annex.			
* Special categories of cited documents:  "A" document defining the general state of the art which is not considered to be		"T" later document published after the inte date and not in conflict with the applic principle or theory underlying the inve	ation but cited to understand the
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